

**Eng 120-501 -- Mathematics for Engineering Applications**  
**Mondays, Tuesdays & Wednesdays 9:00-10:15 Thursdays 8:30-10:30**  
**All in A126**

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**Instructor:** Annette Hatch

**Office:** A123

**Office Hours:** STEM Center: Tues/Wed 3:00-5:00

**A123:** Mon 3:00-5:00 & Wed 1:30-3:00

Or by app't.

**Email:** [ahatch2@unm.edu](mailto:ahatch2@unm.edu)

**Phone:** 925-8642

**COURSE DESCRIPTION:** Provides an overview of basic engineering math topics necessary for success in second year engineering courses. Topics are presented in the context of engineering applications, and reinforced through labs and examples from core engineering courses. Prerequisite: MATH 121.

**COURSE LEARNING OUTCOMES:** Upon successful completion of the course students will be able to perform the mathematical processes necessary to solve second year engineering problems.

**COURSE MATERIALS:** **Introductory Mathematics for Engineering Applications** by Rattan & Klingbeil (**Wiley, 1<sup>st</sup> ed**), **Matlab for Engineers** by Moore (Optional, This is the Matlab book for UNM-Main's CS151L.), grid-paper composition book (This item may not be shared with other classes), engineering paper, pencil, scientific calculator, flash drive and 3-ring binder/folder.

**Grading Scale** (Note: + and – of grades are possible but only if of benefit to the student.)

A	90 – 100%	CR	Credit 72 – 100%
B	80 – 89%	NC	No Credit < 72%
C	70–79%		
D	60–69%		
F	< 59%		

<b>Quizzes, Homework, Programs, Labs</b>	<b>15% each for a total of 60%</b>
<b>Midterm Exam</b>	<b>20%</b>
<b>Final Exam</b>	<b>20%</b>

**ATTENDANCE POLICY:** Attendance and participation is crucial and mandatory. If a student misses 3 classes or 2 labs in the first three weeks, the student may be dropped from the class. The student bears full responsibility for the material and procedural information covered in class or posted online.

**IN-CLASS QUIZZES:** A 20-minute quiz covering recent material will be given each Thursday at the beginning of class. A calculator and one 3x5-inch card will be permitted. If you are late, you will be allowed only the time remaining in the 20 minutes to complete the quiz. If you are absent or arrive after the quiz has been collected, you will not be able to make up the quiz. The two lowest quiz scores will be dropped.

**HOMEWORK:** There will be weekly homework assignments. Homework is due by the end of the class period on the due date. Late homework will be accepted up to noon two days after it is due at a 50% reduction in points. Homework must be neat, legible and submitted as shown on the homework example or the assignment will be returned ungraded and no credit will be given for that assignment.

**LABS:** Labs will be performed on Thursdays. A lab book must be kept as instructed. Lab prep, notes and results will be collected and graded weekly.

**PROGRAMS:** Short MATLAB programs will be assigned each week. Completed programs will be emailed to [ahatch2@unm.edu](mailto:ahatch2@unm.edu) by midnight on the due date.

**MID-TERM AND FINAL EXAMS:** Exams will be cumulative. A calculator and one 8½x11-inch sheet of paper will be permitted. No Internet connectivity will be allowed. Phones will be off.

**UNM EMAIL/BLACK BOARD LEARN ACCESS:** Beginning Fall 2015 semester, all UNM-Valencia students will need a UNM Net ID which can be created by going to: <http://it.unm.edu/accounts/>. UNM Net ID will give you access to the computer labs on campus, blackboard learn and UNM Email.

**SUPPORT SERVICES:** The Valencia Campus Library provides a quiet atmosphere for study and is an excellent resource for supplementary materials. Audiotapes and videotapes are available for student use through the library. The STEM Center offers tutoring at no cost to the student. For best results, schedule appointments for tutoring at (505) 925-8515. Students who miss tutoring appointments may be denied future appointments.

**EXPECTATIONS:** Students are expected to conduct themselves in a polite, courteous, professional and collegial manner. Cell phones must be set on silent. Please step into the hall if you need to take a call during class. Cell phones must be turned off during exams.

**DISABILITY STATEMENT:** If you have a documented disability, please provide me with a copy of your letter from Equal Access Services as soon as possible to ensure that accommodations are provided in a timely manner. The Equal Access Office can be reached at 925-8510.

**COMPUTER LAB RESPONSIBILITY:** Please be advised that use of computer labs on UNM properties is governed by "Policy 2500: Acceptable Computer Use" which can be found at <http://policy.unm.edu/university-policies/2000/2500.html>. Food and drink are also prohibited in any computer lab on campus. Anyone violating these policies is subject to possible suspension and loss of computer lab privileges.

**UNM's Policy on Academic Honesty:** Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, including dismissal, against any student who is found responsible for academic dishonesty. Any student who has been judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests or assignments, claiming credit for work not done or done by others; hindering the academic work of other students; and misrepresenting academic or professional qualifications within or outside the University.

**IMPORTANT DATES with respect to this class:**

Labor Day (No classes): Monday, September 7, 2015

Last date to drop without a grade: Friday, September 4, 2015

Fall Break: Thursday & Friday, October 8-9, 2015

Thanksgiving Break: Thursday & Friday, November 26-27, 2015

**Final Exam: 9:00-11:00 AM Wednesday, December 9, 2015 in A126**

## APPROXIMATE SCHEDULE

Week	Dates	Topic	Lab
1	8/17-20	Linear Equations	Pi
2	8/24-27	Linear Equations	DC circuits
3	8/31-9/3	Trig	Surveying Heights
4	9/8-10	Trig, Vectors & Matrices	3D Positions
5	9/14-17	Vectors & Matrices	Moments
6	9/21-24	Trig & Matrices	Sinusoids & DC Circuits
7	9/28-10/1	Derivatives	Cost Optimization
8	10/5-7	Derivatives	Fall Break – No Lab
9	10/12-15	Derivatives	Heat Transfer
10	10/19-22	Review	Midterm Exam – No Lab
11	10/26-29	Integrals	Center of Mass
12	11/2-5	Integrals	Work
13	11/9-12	Statistics	Packaging
14	11/16-19	Diff Equations	Leaky Bucket
15	11/23-25	Exponentials	Thanksgiving – No Lab
16	11/30-12/3	Review	Open Lab